

REMARKS***Status of the Application***

Claims 1 through 25 are pending in this case. Applicants propose adding claims 26 through 32.

The previous prior art rejections based upon Consoli have been withdrawn in view of the declaration filed on or about September 14, 2001. Claim 14 stands objected to for informalities. Claims 1 through 25 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Number 5,137,456 (Desai et al.).

In view of the above amendments and following remarks, Applicant respectfully requests reconsideration of the present application.

The Prior Art Rejections

Independent claims 1, 14, 21, and 24 recite an electrical connector half with an array of mating elements for connecting with an electrical component and a corresponding array of contacts for connecting with a second connector half. Applicant respectfully submits that Desai et al. do not teach or suggest this claim element.

Independent claim 26 requires forming a semi-permanent connection between a first connector half and a substrate and frictionally mating the first and second connector halves. In order for a reference to anticipate claim 26, it must teach semi-permanently connecting a first connector half to a substrate. Applicant respectfully submits that Desai et al. do not teach this aspect of the claimed invention.

Desai et al. teach a connector for connecting a pair of printed circuit boards. Specifically, Desai et al. disclose a memory module 100 that is connected to a connector 21, which is connected to a substrate 101. According to Desai et al., memory module 100 comprises a substrate 105 that has circuitry with semiconductor chips 107 attached thereto. The Examiner asserts that substrate 105 of Desai et al. anticipates the connector half of the claimed invention. Applicants respectfully disagree. Amended claims 1, 14, 21, and 24 now recite a connector half having an array of mating elements for connecting with an electrical component and a corresponding array of contacts for connecting to a second connector half. Desai et al. do not teach an array of mating elements, but rather, teach a circuit board with circuit chips attached thereto. There is

no indication whatsoever by Desai et al. that an array of mating elements may be used. Furthermore, Desai et al. certainly do not suggest that an array of mating elements corresponds to an array of contacts on the connector half.

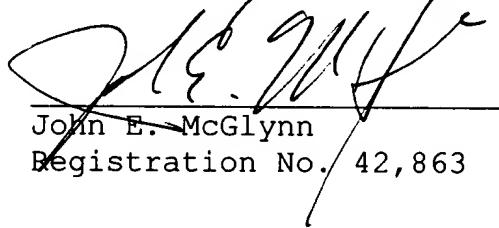
With respect to claim 26, Desai et al. nowhere teach forming a semi-permanent connection between connector half 21 and circuit board 101. Rather, contacts 10 of connector half 21 merely come into contact with conductive metal 53 on the substrate. No soldering or other form of semi-permanent connection is made between connector half 21 and circuit board 101. Indeed, Desai et al. state it is an object of their alleged invention to provide a connector for providing high density interconnections, "which connections can be readily separated and repeated." (Col. 2, ll. 36-40.) Clearly, Desai et al. had not envisioned creating semi-permanent connections between a connector and a substrate.

Therefore, because they entirely fail to teach claimed elements of the invention, Desai et al. do not anticipate or render obvious the claimed invention. Accordingly, Applicants respectfully request withdrawal of the prior art rejection.

CONCLUSION

Applicants respectfully submit that claims 1-25 patentably define over the prior art of record. Reconsideration of the present Office Action and a Notice of Allowance are respectfully requested.

Respectfully submitted,



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Date: 2/27/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In accordance with 37 C.F.R. § 1.121, below is a marked up copy of amended claims 1, 8, 13, 14, 21, 23, and 24. A copy of newly added claims 26 through 32 is provided as well.

1. (amended) An electrical connector assembly adapted for forming a mechanical and an electrical connection between a component and a substrate, said connector assembly comprising:

a first connector half having a first array of mating elements and adapted for connection to said substrate; and

a second connector half, for mating with said first connector half, said second connector half having a second array of mating elements [and] adapted for connection with said component, and an array of electrical contacts corresponding electrically to said second array of mating elements and adapted for connection with said first connector;

whereby mating said first and second connector halves electrically connects said component to said substrate.

8. (amended) An electrical connector assembly as recited in Claim 1, wherein [an] said array of electrical contacts on said second connector half corresponds electrically to an array of ball type contact portions on said component.

13. (amended) An electrical connector assembly as recited in Claim 1, wherein the second array of mating elements and [an] said array of electrical contacts on said second

connector half are on opposing sides of said second connector half.

14. (amended) An electrical connector assembly adapted for forming a mechanical and an electrical connection between a component and a connector half, said connector assembly comprising:

a connector half, for mating with another connector half, having an array of mating elements and an array of electrical contacts electrically corresponding to said array of mating elements; and

an electrical component having an array of ball type contact portions attached thereto corresponding to said array of mating elements. [;]

21. (amended) A method of removably attaching an electronic device to a substrate, the electronic device having fusible elements thereon, the method comprising the steps of:

mounting a first connector to the substrate; and
fusing said fusible elements on the electronic device to [contacts] an array of mating elements on a second connector, said second connector having an array of contacts corresponding electrically to said array of mating elements, said array of contacts being mateable with said first connector;
wherein the electronic device is removably attached to the

substrate without having to reflow the fusible elements.

23. (amended) The method of claim 21, wherein said second connector includes a housing having a recess in which a tail of each of said [contacts] mating elements reside, and the fusing step at least partially occurs in said recess.

24. (amended) In a ball grid array connector engageable with a mating connector mounted to a substrate, the ball grid array connector having a housing, an array of contacts for connecting with the mating connector, an array of mating elements corresponding to the array of contacts, and fusible elements mounted to said contacts, wherein the improvement comprises said fusible elements being part of an electronic device so that said electronic device can removably attach to said substrate without having to reflow said fusible elements.

26. (new) An electrical connector assembly comprising:

a first connector half having a first array of mating elements and adapted for semi-permanent connection to a substrate; and

a second connector half, for frictionally mating with said first connector half, said second connector half having a

second array of mating elements adapted for semi-permanent connection with said component,

whereby frictionally mating said first and second connector halves electrically and mechanically connects ~~said~~ ^{W.L.} component to ~~said~~ substrate.

27. (new) An electrical connector assembly as recited in Claim 26, wherein said first connector half is adapted for connection to said substrate via an array of ball type contact portions on said first connector half that form an electrical connection with an array of electrical contacts on said substrate by way of solder reflow.

28. (new) An electrical connector assembly as recited in Claim 26, wherein said second connector half connects to said component via an array of ball type contact portions on said component that form an electrical connection with an array of electrical contacts on said second connector half by way of solder reflow.

29. (new) An electrical connector assembly as recited in claim 26, wherein said first connector half comprises an array of connector pairs projecting therefrom, and said second connector half comprises an array of projections, and when said first connector half and said second connector half are frictionally mated said array of projections frictionally interface with said array of elongated connector pairs.

30. (new) An electrical connector assembly as recited in claim 29, wherein said connector pairs have an outwardly arced shape.

31. (new) An electrical connector assembly as recited in claim 29, wherein said connector pairs have rounded tips.

32. (new) An electrical connector assembly as recited in claim 29, wherein said connector pairs have substantially pointed tips.